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DATE: December 16, 2005

Memo

TO: RHIC E-Coolers

FROM: *Ady Hershcovitch*

SUBJECT: **Minutes of the December 16, 2005 Meeting**

Present: Ilan Ben-Zvi, Peter Cameron, Xiangyun Chang, Alexei Fedotov, Wolfram Fischer, Harald Hahn, Ady Hershcovitch, Dmitry Kayran, Jorg Kewisch, Vladimir Litvinenko, William Mackay, Christoph Montag, Boaz Nash (SLAC), Vadim Ptitsyn, Thomas Roser, Triveni Srinivasan-Rao, Steven Tepikian, Dejan Trbojevic, Gang Wang (SUNY Stony Brook).

Topics discussed: Navy Funding, Diamond Cathode, Untwisting RHIC

Navy Funding: Ilan opened the meeting by mentioning the office of navy research (ONR) FEL program, and that the ONR may fund BNL to develop an 80 MeV double pass energy recovery LINAC (ERL). Other than the electron gun, this ERL meets or exceeds all of RHIC electron beam cooling requirements. In answer to Wolfram regarding a target date for ERL completion, and to Thomas regarding initial funding, Ilan replied 2010 for completion with initial funding possible this year. Ilan also added that Peter Cameron's proposal for diagnostic R&D funding was very well received. He was asked to submit a request for the next funding cycle.

Diamond Cathode: in answer to Thomas regarding progress in diamond cathode R&D, Triveni said that there were some encouraging results with the synthetic polycrystalline CVD diamond. There were some problems with the gun; parameters have been specified for a new gun, which will be ordered shortly. Ilan continued by reporting that student Jacob Grimes (SUNY Stony Brook) successfully brazed diamond to niobium. Triveni added that the joint was tested and was found to be vacuum tight.

Untwisting RHIC: during the last half of the meeting Steve Tepikian presented a scheme to uncross the 12 O'clock and 4 O'clock intersection points at RHIC. The idea is to generate larger regions of free space for RHIC electron beam cooling and even for the future E-RHIC. Steve showed a preliminary scheme based on reversing current in quads and using trim quads for matching zero dispersion in remaining interaction regions. The scheme seems feasible. A discussion ensued regarding various details. Ilan asked about free space available for cooling and what parameters should be sought. The consensus was to aim for a free space of 100 meter with a beta of 200.